

REMARKS/ARGUMENTS:

Claims 1, 8, and 11 have been amended. Claims 1, 3, 4, 8, 10, 11, and 13 remain in the application. The specification has been amended.

The Examiner objected to the specification and required that a substitute specification be submitted. Applicant has amended the specification to remove any ghost characters between lines of text and to add in any obliterated text. Therefore, a substitute specification has been provided and it is respectfully requested that the specification, as amended, overcomes any objection and it is respectfully requested that the objection be removed.

Claims 1, 3 and 4 were rejected under 35 USC §112, first paragraph, as failing to comply with the written description requirement. Applicant has amended claim 1, to reasonably convey to one skilled in the relevant art that the inventors at the time the application was filed had possession of the claimed invention. Therefore, it is respectfully submitted that claim 1, as amended, and the claims dependent therefrom overcome the rejection under 35 USC §112, first paragraph, and are allowable over this rejection.

Claims 1 and 4 were rejected under 35 USC §103(a) as being unpatentable over Sankey, et al., 4,132,422 in view of Welschof, et al., 4,747,805. Applicant respectfully traverses this rejection.

U.S. Patent 4,132,422 to Sankey, et al., discloses sealing members for universal joints.

U.S. Patent 4,747,805 to Welschof, et al., discloses a protective boot assembly for constant velocity universal joint.

In contradistinction, claim 1, as amended, claims a constant velocity universal joint boot including a crimping lip, the crimping lip having a plurality of radially distributed apertures which are oriented parallel to the longitudinal axis and are approximately 35% to 70% of the

crimping lip thickness for reducing the stiffness and increasing the compressibility of the crimping lip. The crimping lip also has a thickness that is greater than other portions of the boot. The boot also includes a stem portion and an outwardly curved portion wherein the stem portion is arranged between the cylindrical neck member and the outwardly curved portion.

Sankey, et al., alone or in combination with Welschhof, et al., does not disclose, teach, suggest or even contemplate the present invention as claimed in amended claim 1. In particular, Sankey, et al., does not disclose, teach, or even suggest a constant velocity universal joint boot having a cylindrical neck member for receiving a shaft and a stem portion and an outwardly curved portion wherein the stem portion is arranged between the neck member and the outwardly curved portion. Furthermore, neither Sankey, et al., or Welschhof, et al., discloses, teaches, or even suggests the constant velocity universal joint boot having a crimping lip that has a thickness that is greater than other portions of the boot. Also neither Sankey, et al., or Welschhof, et al., discloses, teaches or suggests a constant velocity universal joint boot having a crimping lip wherein that crimping lip has a plurality of radially distributed apertures which are oriented parallel to the longitudinal axis and are approximately 35% to 70% of the crimping lip thickness for reducing the stiffness and increasing the compressibility of the crimping lip. Nowhere in Sankey, et al., is it taught, suggested or even contemplated to have a boot with a neck member, a stem portion, and an outwardly curved portion wherein the stem portion is arranged between the neck member and the outwardly curved portion. Sankey, et al., only discloses or teaches a generally annular U-section flexible sealing member that has a neck member but no stem portion arranged therebetween.

Furthermore, neither the Sankey, et al., or Welschhof, et al. reference teach, suggest or even contemplate having a plurality of radially distributed apertures that are approximately 35%

to 70% of the crimping lip thickness for reducing the stiffness and increasing the compressibility of the crimping lip of a constant velocity universal joint boot. Furthermore, it is not proper to infer or speculate a claimed limitation of the Applicant into the Welschof, et al., or the Sankey, et al., reference unless there is a specific teaching or suggestion to do such in each reference. Hence, as neither Sankey, et al., or the Welschof, et al., reference discusses, discloses, suggests or even contemplates any type of radially distributed apertures having any type of reduced size with respect to a crimping lip thickness such a limitation cannot be inferred or speculated into the specification. Furthermore, unless the specification or drawings specifically state that the drawings are to scale, the drawings of the Welschof, et al. patent cannot be used to infer or speculate a reduced thickness of a crimping lip because of any recesses or aperture found therein. Therefore, as there is no teaching or suggestion in either of the references of specific percentage reductions of a crimping lip thickness via radially distributed apertures, the Welschof, et al., and Sankey, et al., references alone or in combination with each other cannot be used in combination to show, disclose, anticipate or teach the Applicant's invention as claimed in amended claim 1. Therefore, the combination of Sankey, et al., and Welschof, et al., must fail. Therefore, it is respectfully submitted that claim 1, as amended, and the claims dependent therefrom, overcome the rejection under 35 USC §103(a) and are allowable over this rejection.

Claims 1 and 3 were rejected under 35 USC §103(a) as being unpatentable over Sankey, et al., 4,132,422 in view of Burnett, 3,195,360. Applicant respectfully traverses this rejection.

U.S. Patent 3,195,360 discloses a boot construction.

Applicant respectfully submits that claim 1, as amended, is allowable for the same reasons given above for the rejection under 35 USC §103 over Sankey, et al., and Welschof, et al. Furthermore, it is respectfully submitted that Burnett does not disclose, anticipate or teach

any type of radially distributed apertures which are oriented parallel to a longitudinal axis and approximately 35% to 70% of the crimping lip thickness for reducing the stiffness and increasing the compressibility of the crimping lip. All Burnett discloses and teaches is a notch or groove that will be used to allow trapped air to escape from a groove into which the beads of the seal are being placed. Therefore, nowhere is it taught, suggested or even contemplated to put a plurality of radially distributed apertures on a crimping lip to reduce stiffness and increase the compressibility of the crimping lip. The boot construction of the Burnett patent is not even for use in and would fail in a crimping type environment. Therefore, the Burnett patent only discloses notches for release of air trapped in a groove and a combination of Burnett and Sankey, et al., cannot result in Applicant's constant velocity universal joint boot as claimed in amended claim 1. Therefore, it is respectfully submitted that claim 1, as amended, and the claims dependent therefrom overcome this rejection under 35 USC §103(a) and are allowable over this rejection.

Claims 1, 4, and 8 were rejected under 35 USC §103(a) as being unpatentable over Sugiura, et al., 5,707,066 in view of Welschof, et al., 4,747,805. Applicant respectfully traverses this rejection.

U.S. Patent 5,707,066 to Sugiura, et al., discloses a boot assembly with adaptor.

It is respectfully submitted that claim 1, as amended, overcomes the rejection under 35 USC §103(a) for the same reasons given above for claim 1 with regard to Sankey, et al., in view of Welschof, et al. Therefore, it is respectfully submitted that claim 1, as amended, and the claims dependent therefrom, overcomes the rejection under 35 USC §103(a) and is allowable over this rejection.

Claim 8, as amended, claims a constant velocity universal joint assembly having a non-convoluted thermoplastic rolling diaphragm boot with a crimping lip. The crimping lip having a thickness that is greater than other portions of the boot. The crimping lip having a plurality of radially distributed apertures for increasing the compressibility of the crimping lip such that the crimping lip has a compressed thickness ratio approximately 50% to 70% of an uncompressed crimping lip thickness.

Sugiura, et al., alone or in combination with Welschof, et al., does not disclose, teach or suggest the present invention of claim 8, as amended. In particular neither Sugiura, et al., or Welschof, et al., discloses, teaches, suggests, or even contemplates the constant velocity universal joint assembly having a non-convoluted thermoplastic rolling diaphragm boot with a crimping lip wherein the crimping lip has a plurality of radially distributed apertures for increasing the compressibility of the crimping lip such that the crimping lip has a compressed thickness ratio of approximately 50% to 70% of an uncompressed crimping lip thickness. Furthermore, neither reference teaches, suggests, or contemplates the crimping lip having a thickness that is greater than other portions of the boot. Nowhere does Sugiura, et al., or Welschof, et al. contemplate, suggest or even teach the use of a crimping lip with a compressed thickness ratio where approximately 50% to 70% of a uncompressed crimping lip thickness. In fact neither reference even discusses a thickness ratio in comparison to a compressed or uncompressed crimping lip. It is not proper to infer or speculate that a reference includes such a requirement if no such teaching or suggestion is found in the specification. Neither reference suggests, teaches or even contemplates such a compressed thickness ratio of any type let alone one that is within a specific 50% to 70% range. Furthermore, it is not proper to state that a crimping lip has a compressed thickness ratio of approximately 50% to 70% of an uncompressed

inferences or speculation are not proper to read into a reference unless a specific teaching or suggestion can be found in the prior art references, journals or the like. Hence, the combination of Sugiura, et al., and Welschof, et al., would not and could not yield Applicant's invention as claimed in amended 8. Therefore, it is respectfully submitted that claim 8, as amended, and the claims dependent therefrom, overcome the rejection under 35 USC §103(a) and are allowable over this rejection.

Claims 8, 10, 11 and 13 were rejected under 35 USC §103(a) as being unpatentable over Sugiura, et al., 5,707,066 in view of Burnett, 3,195,360.

With respect to claim 8, as amended, it is respectfully submitted that claim 8 is allowable for the same reasons given above with respect to claim 8 and the rejection of claim 8 under Sugiura, et al., in view of Welschof, et al. Furthermore, with respect to Burnett '360 the same arguments applied to amended claim 1 above also apply to amended claim 8 and further distinguish claim 8, as amended, over any possible combination or use of Sugiura, et al., and Burnett. Therefore, it is respectfully submitted that claim 8, as amended, and the claims dependent therefrom overcome this rejection under 35 USC §103(a) and are allowable over the rejection.

Claim 11, as amended, claims a constant velocity universal joint and propeller shaft assembly having a non-convoluted thermoplastic boot having an annular upturned edge having a plurality of radially distributed apertures on a radially inward facing surface for increasing the compressibility of the annular upturned edge. The radially distributed apertures reduce required crimping force by up to approximately 50%.

Sugiura, et al., and Burnett, alone or in combination with each other do not disclose, teach or suggest the present invention as claimed in amended claim 11. In particular, neither

Sugiura, et al., or Burnett discloses, teaches or even suggests a constant velocity universal joint and propeller shaft assembly having a non-convoluted thermoplastic boot wherein that boot has an annular upturned edge having a plurality of radially distributed apertures on a radially inward facing surface. Furthermore, neither reference suggests, teaches or even contemplates the radially distributed apertures reducing the required crimping force by up to approximately 50%. In fact nowhere does Sugiura, et al., or Burnett even discuss any type of crimping force necessary to secure a boot to a boot can in a constant velocity universal joint and a propeller shaft assembly as claimed in amended claim 11. Therefore, as neither Sugiura, et al., or Burnett suggest, comment, or even contemplate any reduction in crimping forces it is not possible for a combination of Sugiura, et al., and Burnett to include such a feature therein. Hence, the combination of Sugiura, et al., and Burnett would not and could not create a constant velocity universal joint and propeller shaft assembly as claimed by Applicant in amended claim 11. Therefore, it is respectfully submitted that claim 11, as amended, and the claims dependent therefrom, overcome the rejection under 35 USC §103(a) and are allowable over this rejection.

If applicant can be of any further assistance or provide any other information in the prosecution of this application, the Examiner is requested to call the undersigned at (248) 364-2100.

Respectfully Submitted,

DINNIN & DUNN, P.C.

By: 

Michael T. Raggio (Reg. No. 36,645)
2701 Cambridge Court, Ste. 500
Auburn Hills, MI 48326
(248) 364-2100
Attorney for Applicant

Dated: June 29, 2004